MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2015/2016

TSR7011- SOFTWARE REQUIREMENTS ENGINEERING

(All sections / Groups)

25th MAY 2016
8.00pm-10.00pm
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 4 pages (including cover page) with 4 Questions only.
2. Attempt **ALL** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please print all your answers in the Answer Booklet provided.

Question 1

(a) List and describe FOUR possible stakeholders for a mental healthcare patient information system. (2 marks)

(b) Compare and contrast consistency checks and completeness checks that should be carried out during the requirements validation process. (4 marks)

(c) Discuss TWO problems that occur when requirements must be elicited from three or four different customers. (2 marks)

(d) Why do we say that the requirements model represents a snapshot of a system in time? (1 mark)

(e) Describe the basis notation of Structured Analysis and Design Technique. (1 mark)

Question 2

(a) What kinds of errors are sought during requirements validation? Explain TWO types of errors. (2 marks)

(b) What does 'win-win' mean in the context of negotiation during the requirements engineering activity? (2 marks)

(c) A process model is a simplified description of a process. Produce a coarse-grain activity model of the 'mobile learning application development' process. (4 marks)

(d) What are the FOUR key questions which must be answered when planning improvements to business processes? (2 marks)

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Question 3

(a) The project manager selected the requirements artifact where the actual development effort shall be determined using the requirements management (RM) tool. The RM tool identified all classes that implement the selected requirements artifact. The RM tool calculated the total implementation effort of the identified classes by summing the implementation efforts of the individual classes. Then, the RM tool identified all test cases and change requests related to the selected requirements artifact. Based on the identified test cases, the RM tool calculated the total test and correction effort that can be attributed to the implementation of the selected requirements artifact. Based on the identified change requests, the RM tool identified all changes to the selected requirements artifact and calculated the total effort for adaptation of the associated components and classes. Finally, the RM tool calculated the actual development effort for the selected requirements artifact by summing the total implementation efforts, the total test and correction effort, and the total adaptation effort.

Based on the above scenario, suggest FOUR required traceability relationship types.

(2 marks)

(b) In order to cope with requirements changes throughout the entire lifecycle of a system, establishing a change process is essential. Describe a typical change management process.

(5 marks)

(c) The requirement R50 defines a performance requirement as follow:

R50: The normal response time of the system shall be less than 2 seconds.

Explain why the requirement R50 is unverifiable. (1 mark)

(d) The requirement R100 defines a performance requirement as follow:

R100: The system responds to a user input within 1 second.

Suggest TWO acceptance criteria for requirement R100. (2 marks)

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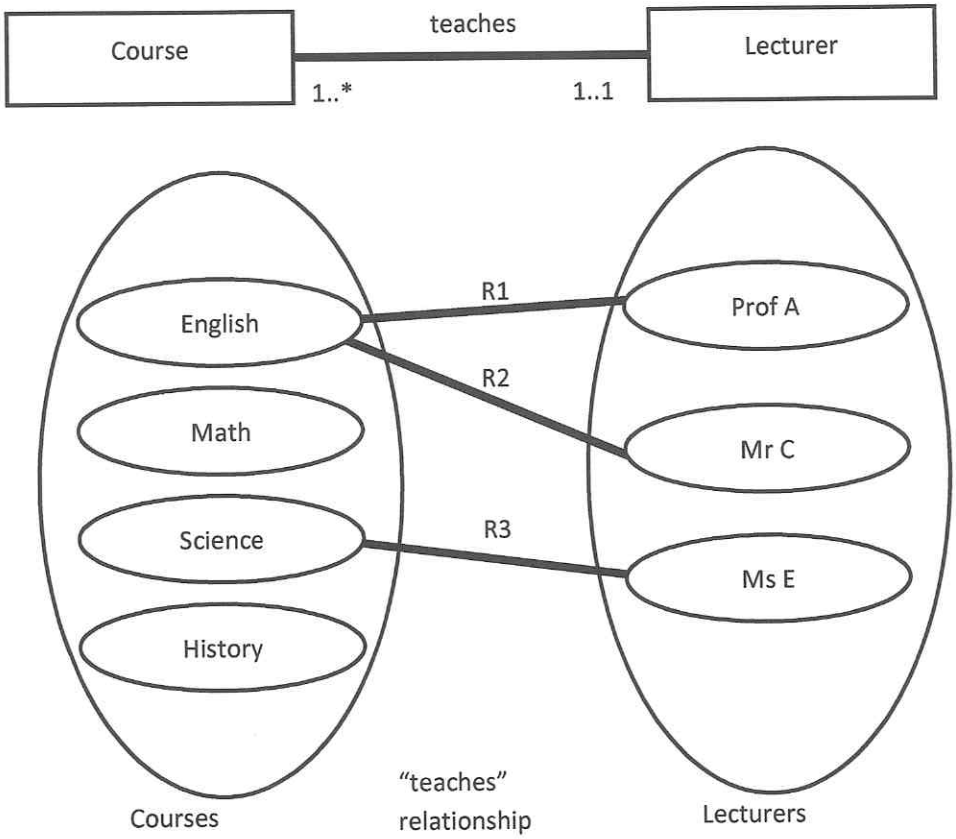
Question 4

(a) A new staff (Mr John) was given the task to model valid exemplary instantiations of entity and relationship types based on the multiplicity constraints specified in the class diagram.



Then, the project manager (Ms Jane) assigned you to check his results and identify THREE possible mistakes. (3 marks)

(b) Draw FOUR valid instantiations for the following class diagram. (5 marks)

(c) Draw an entity relationship model based on the following: (2 marks)

"A vehicle can be a motorcycle or a passenger car. However, no vehicle can be both, a motorcycle and a passenger car."

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